

**30 OCTOBER 2003**



**FALL PROTECTION**

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OPR: 914 AW/SEG (Mr. Alan Davidson)  
Supersedes 914 AWI 91-302 dated  
30 September 2001

Certified by: 914AW/SE (LTC Burnell Stuchell)  
Pages: 7  
Distribution: F

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This instruction implements AFD 91-3, *Occupational Safety and Health*, with references to AFOSH Standard 91-100, *Aircraft Flight line Ground Operations & Activities*, AFOSH Standard 91-501, *Air Force Consolidated Occupational Safety Standard Chapter 13 Fall Protection* and T.O. 00-25-245. It applies to the 914 AW, and the Base Operating Services (BOS) Contractor.

**SUMMARY OF REVISIONS**

It establishes safe operating procedures when an individual can fall 10 feet or more to the ground or next lower level in or around aircraft hangar buildings 850 and 707, all flightline parking ramp areas and designated aircraft repair areas. A bar ( | ) indicates revision from the previous edition.

**1. Procedures:**

1.1. Personnel must utilize some form of fall protection regardless of the task performed anytime there is a potential to fall 10 feet or more to the ground or next lower level. The most preferred method is fall restraint which is the use of mobile platforms or stationary platforms (B-2 stand or Hi-lift), second is the use of fall arrest system (Personal Fall Arrest System). The least preferred method is the procedural control, which is developed and implemented through the application of operational risk management (ORM). This method is used only when both fall restraint and fall arrest methods are impractical. An example would be a preflight of an aircraft wing on the flight line where work stands or overhead tie off points are not available. Using procedural controls, fall protection is achieved through very aggressive risk management procedures that minimize the risk of falling. The application of procedural control fall protection is designed for an operational aircraft undergoing maintenance during pre-flight, post flight, minor maintenance, cross country, etc.

1.2. Technical Order designated walkways are designed for the protection of the aircraft and are not necessarily areas that, by virtue of location, provide a minimal risk of falling to the next lower level. Some T.O. designated walkways may be suitable locations for utilizing procedural controls as the

method of providing fall protection. However, for tasks to be performed within the T.O. walkways certain actions must be performed prior to allowing personnel within these areas without fall restraint or fall arrest protection. The following actions should take place prior to utilizing procedural control method for fall protection.

1.2.1. Conduct an Operational Risk Assessment, which includes at least the following:

- 1.2.1.1. Environmental conditions for example, rain, snow, etc.
- 1.2.1.2. Condition of surface area for example, wet/slippery/dry, etc
- 1.2.1.3. Task to be performed to include duration.
- 1.2.1.4. Review the T.O. to ensure task assigned is authorized within this location.
- 1.2.1.5. Equipment carried to perform task.
- 1.2.1.6. Type of foot wear utilized by the worker.
- 1.2.1.7. Physical ability of the worker.
- 1.2.1.8. Worker actions, for example, jumping from one surface to another or over-extending themselves by leaning too close to an edge.
- 1.2.1.9. Height from working level to the next lower level.
- 1.2.1.10. Operational urgency.

1.2.2. Once the risk assessment has been conducted and appropriate controls addressed, the decision-making authority in conjunction with the worker should decide if procedural controls are appropriate. If so, they must be documented and communicated to the worker through appropriate training. If for any reason, the appropriate risk assessment measures will not meet the intent of the standard, mobile platforms or fall arrest systems must be utilized.

1.2.3. The use of procedural control is not an open door to disregard other fall prevention measures but a control, when applied appropriately, will/can meet mission requirements. Procedural control is the least preferred method and should only be considered when other fall protection methods are impractical or ineffective.

## 2. Responsibilities:

2.1. Pre-use inspection of fall protection equipment: User will perform a visual inspection of the equipment for overdue inspections, fraying and deterioration, etc. (non-documented). NOTE: If any discrepancies are noted during this inspection, do not use the equipment and notify the supervisor. The equipment will be immediately tagged. Do not use or operate, remove from service and repairs made and inspected prior to use.

2.1.1. Fall protection equipment will not be worn inside aircraft fuel tanks, bladder cells or dry bays classified as hazardous areas.

2.1.2. When using fall protection equipment, a two (2)-man team concept is recommended for assistance and buddy care. The availability of rescue personnel, ladders, or other rescue equipment must be considered prior to working in areas requiring fall protection.

2.2. The fuel systems element chief, ISO dock chief, flight line chief, or designated alternates, are responsible to ensure inspection of the fall arrest system periodically (at least every 180 days mini-

mum). Personnel performing the inspection will be certified in the use of this equipment. Inspection will be documented on the **AFTO Form 244, Industrial Support Equipment Record**, and readily available near the harnesses for user inspection. The inspection date and due date on the **AFTO Form 244** will be in lieu of dates stamped on individual components of the fall arrest system. The system will be assigned an identification number. The harnesses and self-retracting lifeline reels are manufacturer serialized. Inspection will be according to checklists provided in AFOSH STD 91-501, T. O. 00-25-245 and the manufacturer's instructional manual.

2.3. Initial Fall protection training will be documented on the **AF Form 55, Employee Safety & Health Record**, along with annual refresher training.

2.3.1. Employee training considerations. Thorough employee training in the selection and use of personal fall arrest systems is imperative. As stated in the standard, before the equipment is used, employees must be trained in the safe use of the system. This should include the following: Application limits; proper anchoring and tie-off techniques; estimation of free fall distance, including determination of deceleration distance, and total fall distance to prevent striking a lower level; methods of use; and inspection and storage of the system. Careless or improper use of the equipment can result in serious injury or death.

2.4. In the event of an actual fall.

2.4.1. Provide assistance to the victim.

2.4.2. Contact the base fire department @ x 911 (on-base phones), 236-2117 (cellular phones & off-base lines).

2.4.3. Contact aircraft maintenance debrief/dispatch center @ 2272 or by radio, who in-turn will contact:

2.4.3.1. Fire Department (if called in by radio)

2.4.3.2. Base Ground Safety Office @ 2141

2.4.3.3. Command Post @ 2150

2.4.3.4. 914<sup>th</sup> LG/CC @ 2338

2.4.3.5. Individual's Section Supervisor

2.4.4. Affected equipment must be taken out of service immediately, e.g.: harness, self-retracting reel, snatch block roller, horizontal lifeline. Annotate **AF Form 244** and install a warning tag to each piece of equipment.

2.4.5. Affected equipment must be inspected by a competent individual possessing a 7-level or higher prior to any future use. Any questions see the work center supervisor or his designated alternate.

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COMMANDER

## Attachment 1

### GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

**A1.1.** Lifeline: a component consisting of a flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline), or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline), and which serves as a means for connecting other components of a personal fall arrest system to the anchorage.

**A1.2.** Personal fall arrest system: a system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, full body harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of these.

**A1.3.** Horizontal lifelines, where used, shall be designed, and installed as part of a complete personal fall arrest system, which maintains a safety factor of at least two, under the supervision of a qualified person. An approved lifeline will be capable of supporting a minimum dead weight of 5,400 pounds per person when applied to center of lifeline.

**A1.4.** Anchorages to which personal fall arrest equipment is attached shall be capable of supporting at least 5,000 pounds (22.2 kn) per employee attached, or shall be designed, installed, and used as part of a complete personal fall arrest system which maintains a safety factor of at least two, under the supervision of a qualified person.

**A1.5.** Self-retracting lifeline/lanyard: a deceleration device which contains a drum wound line which may be slowly extracted from, or retracted onto, the drum under slight tension during normal employee movement, and which, after onset of a fall, automatically locks the drum and arrests the fall.

**A1.6.** Lanyard: a flexible line of rope, wire rope, or strap, which is used to secure the full body harness to a deceleration device, lifeline, or anchorage.

**A1.7.** Snap-hook: a connector comprised of a hook-shaped member with a normally closed keeper, or similar arrangement, which may be opened to permit the hook to receive an object and, when released, automatically closed to retain the object.

**A1.8.** Body harness: a design of straps which may be secured about the employee in a manner to distribute the fall arrest forces over at least the thighs, pelvis, waist, chest and shoulders with means for attaching it to other components of a personal fall arrest system.

**A1.9.** Deceleration device: any mechanism, such as a rope grab, ripstitch lanyard, specially woven lanyard, tearing or deforming lanyard, or automatic self retracting-lifeline/lanyard, which serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limits the energy imposed on an employee during fall arrest.

**A1.10.** Qualified person: one with a recognized degree or professional certificate and extensive knowledge and experience in the subject field who is capable of design, analysis, evaluation and specifications in the subject work, project, or product.

**A1.11.** Competent person: a person who is capable of identifying hazardous or dangerous conditions in the personal fall arrest system or any component thereof, as well as in their application and use with related equipment.

**A1.12.** Personal fall arrest systems or components shall be used only for employee fall protection.

**A1.13.** Personal fall arrest systems or components subjected to impact loading shall be immediately removed from service and shall not be used again for employee protection unless inspected and determined by a competent person to be undamaged and suitable for reuse.

**A1.14.** Fall hazard: a situation where personnel are not standing on the ground and so are in some danger of falling. The height above ground where personnel are working determines the level of hazard and the requirements to protect from a fall.

**A1.15.** Minimal fall hazard: work accomplished between 1 inch and 6 feet above ground level. No personal restraint system is required, however, personnel must carefully inspect any stands and work surfaces used to stand on to perform the work. If any potential threat is visible (wet surface, cluttered area, loose items on surface, etc.) remove possible dangers before beginning work. Use of a personnel restraint system is never prohibited.

**A1.16.** Moderate fall hazard: work accomplished between 6 and 10 feet above ground. Note: A conscious effort must be made to conform to the six-foot rule. The six-foot rule would require some level of protection, in any situation where an employee could fall this distance or contact dangerous equipment.

**A1.17.** Severe fall hazard: work accomplished above 10 feet. Personnel must have a fall protection system in use.

**Attachment 2****FALL PROTECTION CHECKLIST**

**A2.1.** Operational risk assessment for walking and working above 10 feet without fall protection.

**A2.2.** What is to be done:

A2.2.1. Dash One (-1)

A2.2.2. Dash six (-6) inspections (preflight, postflight, thruflight, home station, etc.)

A2.2.3. Scheduled maintenance

A2.2.4. Unscheduled maintenance

**A2.3.** What position will the work be done in:

A2.3.1. Standing

A2.3.2. Sitting

A2.3.3. Kneeling

A2.3.4. Laying

**A2.4.** Where will you be:

A2.4.1. Inside the walkway

A2.4.2. Outside the walkway

A2.4.3. Reaching outside the walkway

**A2.5.** What location is the work to be done at:

A2.5.1. Fuselage

A2.5.2. Wing leading edge

A2.5.3. Wing tip

A2.5.4. Wing trailing edge

A2.5.5. Empennage

A2.5.6. Horizontal stabilizer

**A2.6.** What is the condition of the surfaces:

A2.6.1. Dry

A2.6.2. Wet

A2.6.3. Frost

A2.6.4. Ice

A2.6.5. Snow

**A2.7.** What are the weather conditions:

- A2.7.1. Fair
- A2.7.2. Rain
- A2.7.3. Snow
- A2.7.4. Sleet
- A2.7.5. Fog

**A2.8.** Wind conditions:

- A2.8.1. Calm
- A2.8.2. Breeze
- A2.8.3. Wind warning

**A2.9.** How will you get to the top of the aircraft:

- A2.9.1. Through flight deck hatch
- A2.9.2. Cargo door hatch
- A2.9.3. Cargo compartment wing hatch
- A2.9.4. Stand
- A2.9.5. Ladder
- A2.9.6. Man lift
- A2.9.7. Bucket truck

**A2.10.** Why does the work need to be done without fall protection:

- A2.10.1. T.O. allows it
- A2.10.2. Away from home station and there is no fall protection at the location
- A2.10.3. Mission requires rapid/immediate response
- A2.10.4. War time conditions

**A2.11.** Which work shift is the task being performed:

- A2.11.1. Day shift
- A2.11.2. Nightshift